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Editor - Captain L. B. Marshall, MC, USN

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Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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Dental Technician Training Opportunities

There are several opportunities for specialized and advanced training currently available to dental technicians on active duty. Many vacancies still exist in the classes scheduled to be convened 11 Jan 1954, in the Dental Prosthetic Technician Schools (Class C) at the Naval Training Centers, San Diego, Great Lakes, and Bainbridge. The present shortage of dental prosthetic technicians will become acute unless more technicians are given this training. Interested dental technicians should submit requests in accordance with Bureau of Medicine and Surgery Instruction 1510.3.

A limited number of vacancies also exist in the Advanced Course of Instruction for General Dental Technicians (Class B) and the Advanced Course of Instruction for Dental Repair Technicians (Class B). Both of these courses will be convened 13 Jan 1954 at the U. S. Naval Dental School, National Naval Medical Center, Bethesda, Md. Interested dental technicians should submit requests for assignments to these courses in accordance with Bureau of Medicine and Surgery Instruction 1510.3. (DentDiv, BuMed)

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Inheritance of Diseases Primary in the Muscles

Studies of inherited muscular disorders are subject to the same difficulty and inconvenience encountered in any genetic study of human beings. The life span of the geneticist is no longer than that of those whom he studies and the number of generations he can observe is limited; nor can man be studied under the conveniently controlled circumstances possible with mice or *drosophila*. A review of the reported studies on inherited muscular disorders testifies to the inaccuracies and confusion which are apt to arise.

The inheritance of a defective gene causing a muscular disease may show a wide variation of expression in different individuals. For example, the gene causing myotonia dystrophica may manifest itself through myotonia coupled with muscular dystrophy, cataract, and even some mental changes. Yet in some cases its presence is evidenced only by cataract.

This variability in expressivity (the form, or degree, of manifestation) has led some workers to classify certain variations in the expression of a single gene as different disorders with separate patterns of inheritance. Others have grouped together separate disorders as different expressions of the same gene.

Experience has indicated that these errors may be obviated and accurate results best obtained through the study of large family groups. Large pedigrees furnish excellent opportunities to study traits in their different forms of expression. A relatively complete and reliable picture may be obtained when the trait can be observed as it has passed through several generations of the same large kindred.

Experience in family studies has also revealed that great care must be exercised in obtaining data. In casual questioning of a patient about his relatives, information received is very apt to be misleading or at best unfruitful. Secondhand information in genetic studies should be accepted only when actual examinations are impossible and then only with reservations. Also, because reliable genetic ratios are completely dependent on correct diagnosis, it is desirable that the examining physician be one who has observed the trait in question in its various forms of expression.

There are numerous abnormal conditions of the muscles which are usually hereditary. These include such traits as the absence of certain muscles, muscular dystrophies, muscular atrophies, and the myotonias. This discussion is limited primarily to those muscular diseases which have been studied more or less thoroughly at the Laboratory for the Study of Hereditary and Metabolic Disorders at the University of Utah Medical College.

There is need for a more accurate classification of all heritable muscular diseases. This is especially true of the muscular atrophies and the different forms of ataxia. Peroneal muscular atrophy, for example, has been reported as following a dominant, an autosomal recessive, and a sex-

linked recessive pattern of inheritance. It is hoped that the studies now in progress will clarify the understanding of the mode of inheritance of these muscular disorders.

Progressive muscular dystrophy is perhaps the most important and best known group of muscular disorders. Most cases of progressive muscular dystrophy can be classified into two general groups, the facioscapulohumeral type and the childhood type. Each of these is inherited as a separate genetic entity following a different pattern of inheritance. Facioscapulohumeral progressive muscular dystrophy varies in its form of expression. Its age of onset is usually between 7 and 20 years. It is inherited as an autosomal dominant. Childhood progressive muscular dystrophy differs from facioscapulohumeral muscular dystrophy both in its mode of inheritance and in its pattern of expression. The age of onset is usually about 3 years. There is good evidence that it is inherited as a sex-linked recessive trait. The gene producing childhood muscular dystrophy has a high mutation rate. Its minimum mutation rate is roughly estimated at 1 in 10,000 (approximately  $1 \times 10^{-5}$ ).

Three types of myotonia are discussed, myotonia congenita (Thomsen's disease), paramyotonia, and myotonia dystrophica. Myotonia congenita is not a common disease. It is congenital or can be identified at a very early age. It is inherited as an autosomal dominant. Paramyotonia is a rare disease. It is expressed as an immobility of the muscles brought on by cold. It can be detected when a child is only a few months old and is inherited as an autosomal dominant. Myotonia dystrophica is the most common as well as the most severe form of the myotonias. It is inherited as an autosomal dominant with a wide variability of expression.

It is evident that all cases of family periodic paralysis described in the literature are not due to the same mutation. In the kindred studied at the University of Utah the defect was inherited as an autosomal dominant.

Because the traits described as being due to autosomal dominant genes have not occurred in the homozygous condition it cannot be determined whether or not dominance is complete or what the expression of the homozygote is. (Am. J. Med., 49 W. 45th St., New York 36, N. Y., Oct. 1953, F. E. Stephens, Ph. D.)

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#### Myotonia Atrophica

Myotonia atrophica is a familial disease of modified mendelian inheritance characterized by myotonia, muscular atrophy of a characteristic pattern, and various combinations of such extramuscular manifestations as gonadal atrophy and insufficiency, cataracts, frontal baldness, electrocardiographic changes, and eventual psychic changes.

The protean manifestations of the disease have drawn the attention of numerous investigators and a wealth of literature about this disorder has been produced. Several hundred cases have been reported in the English and foreign literature, but the exact incidence of myotonia atrophica is unknown because of the probability of many cases having gone unrecognized. Distribution between the sexes is approximately equal.

Myotonia atrophica usually has its onset between the ages of 20 and 30 years.

Myotonia is seen early in the course of the disease, tending to disappear as the muscles atrophy. The myotonia may develop many years before the other manifestations. Therefore, frequently the first symptom is difficulty in releasing objects which have been grasped. This condition is worse after rest and diminishes with each contraction on repetition of movement; it increases with an increase in force of contraction. Myotonia can also be demonstrated by mechanical and electrical stimulation of the muscle. If the affected muscle is struck with a percussion hammer, the contraction shows a prolongation of the phase of relaxation. The myotonic contraction is never painful. Myotonia occurs classically in myotonia congenita (Thomsen's disease), and only under the influence of cold in paramyotonia congenita (Eulenburg's disease). In persons with severe myxedema, muscular hypertrophy and myotonia sometimes can be seen. Myotonia is most commonly seen, however, in myotonia atrophica.

Atrophy of the muscles may begin at any time after onset of the illness, and it is therefore not uncommon simultaneously to find myotonia in one group of muscles and atrophy in another. Myotonia may be minimal or already absent at the time the patient is first seen. In some cases there is not even a past history of myotonia. In atypical cases of myotonia atrophica there is an expressionless face with drooping mouth. Ptosis of the eyelids occurs late in the disease. The voice is nasal and expressionless. Atrophy of the temporalis, masseter, and sternocleidomastoid muscles is usually severe, leading to much difficulty in flexing the neck and legs and giving the appearance of a "swan neck" deformity when the patient is seen in an upright position. Atrophy and loss of strength of muscles of the extremities exceed in severity that of the central musculature. There are no fasciculations, and the "dystrophic" facial movements of facioscapulohumeral muscular dystrophy do not occur. In cases with advanced wasting, the deep reflexes are diminished or even absent. No pathologic reflexes are ever present and no sensory abnormalities are found.

Both men and women tend to develop cataracts, and most cases show some evidence of lenticular opacity to slit lamp examination. In some cases trophic changes of the cornea are found. Alopecia may develop at an early age in both sexes. Testicular atrophy and androgenic deficiency are seen in men, who frequently are sterile and sometimes impotent. Women show evidence of ovarian hormone deficiency and may have menstrual disturbances. The asthenic build of these patients is considered rather characteristic.

The heart is frequently involved in myotonia atrophica, the percentage of cases with cardiac abnormalities increasing with the period of duration of the disease. In a group of 98 cases collected by 33 authors in which electrocardiograms were made, 61 showed abnormal tracings. Low P waves and prolonged PR intervals and intraventricular conduction time were the most frequent aberrations. In most cases there was elevation of the ST segment. In addition, such changes as bradycardia, auricular flutter, atrioventricular dissociation, and bundle-branch block were found. Blood pressure usually is somewhat low and the pulse is small. The heart is usually normal in size. Heart sounds are normal, but splitting of the first sound in the mitral area may be heard.

Myotonia atrophica is now considered a definite disease entity, with its pathomechanism not well understood. It is agreed, however, that the cause is not in the muscles, the peripheral nerves, or the central nervous system. It is probably a metabolic disorder, producing abnormal muscular contractions that ultimately bring on the pathologic changes of atrophy. The extra-muscular dystrophies such as baldness, cataract, gonadal atrophy, et cetera, are probably the expressions of this metabolic disturbance.

A disturbed acetylcholine metabolism at the myoneural junction may play an essential role in the pathomechanism of this disease. Minz studied acetylcholine and cholinesterase content of the myotonic and nonafflicted muscles of the same patient. He found a reversed ratio between acetylcholine and cholinesterase in the myotonic muscles, with the cholinesterase being markedly diminished when compared with the ratio in the normal muscles.

The increased acetylcholine activity (increased production or decreased destruction by cholinesterase) is an accepted explanation of the pathomechanism in myotonia congenita. If the suggestion is accepted that myotonia congenita and dystrophia myotonica were identical, the former being merely an early stage of the latter, the understanding of dystrophia myotonica would be simplified.

In spite of numerous therapeutic experiments, no effective treatment has been found so far for this disease. (Postgraduate Medicine, Oct. 1953, R. D. Trevathan, M. D., V. A. Hospital, Tuscaloosa, Ala., and A. E. Hussar, M. D., V. A. Hospital, Montrose, N. Y.)

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#### Isonicotinic Acid Hydrazide in Tuberculosis

Following reports on the effectiveness of isonicotinic acid hydrazide (Rimifon) in the treatment of tuberculosis, a clinical trial was instituted at the San Angel Sanatorium in Mexico City. Beginning in March 1952, a series of 13 hospitalized and 12 ambulatory patients were started on therapy with Rimifon and the results evaluated at the end of a 90-day period.

The hospitalized patients selected for study were those known to be resistant to streptomycin and para-aminosalicylic acid, in whom all other procedures, medical and surgical, had been found to be ineffective. In addition, these patients were under observation for many months and in each instance, there was no evidence of spontaneous improvement. Throughout the study an attempt was made to maintain the same circumstances of environment, rest, and food as during the previous therapeutic regime, except that increased food allowance was provided if specifically requested by the patient. No other medication was administered.

The ambulatory group was composed chiefly of former patients of the Sanatorium having less serious infection who were observed weekly in the out-patient clinic.

The following procedures were carried out for critical evaluation of the effects of therapy: roentgenograms, hematological examination, sputum examination, and biochemical examination.

The dosage used in this series, with one exception, was 4 mg. per kg. body weight per day throughout the 90-day period. Administration was oral, in 3 divided daily doses. This dosage regime was utilized on the basis of the early experiences reported. It might be noted parenthetically, however, that higher dosage ranges may be, and probably should be, utilized. In 1 patient not responding satisfactorily at 4 mg. per kg., the dose was increased to 8 mg. per kg. daily and maintained without toxicity for over 90 days.

Clinical trial over a 90-day period indicates that the drug is almost nontoxic in human beings at a daily dosage of 4 mg. per kg. body weight. The drug was noted to produce a marked euphoric effect.

In the hospitalized group symptomatic response in the majority of patients was excellent as evidenced by increase in appetite, rapid gain in weight, tendency toward normal temperature, diminished cough, and improved character of the sputum.

Of the 12 hospitalized cases with positive sputum cultures at the beginning of therapy only 5 had consistently negative cultures at the end of the treatment period.

The hematological changes were consistent with the shifting of the immunobiological response of the body to the tuberculous infection.

Roentgenological changes were slow in developing in the few cases in which they were evident. Examination of the films taken at the end of 90 days of treatment shows the beginning of change in some of the cases not previously exhibiting an improvement.

Some patients completely failed to respond to the drug. There is the possibility of a correlation between failure to respond to isoniazid and previous history of spontaneous or acquired resistance to chemically related drugs such as the thiosemicarbazones.

The results in the ambulatory patients in the series were less satisfactory indicating the need for bed rest and an adequately controlled regime in the treatment program.

In evaluating these results consideration should be given to the fact that in this series the hospitalized patients had not responded to any other procedures and were critically ill at the time treatment was started. Four of the patients were practically moribund and in 3 of these cases the drug proved to be life-saving. The fourth patient responded initially but then regressed. It was believed that her life was prolonged about 4 months because of the drug. Although uniform results were not obtained so far as the degree of response is concerned, isoniazid provided a most effective therapy for the severely ill tuberculous patients in this series. (Dis. Chest, 112 E. Chestnut St., Chicago 11, Ill., Oct. 1953, D.G. Alarcon, M.D., and A. Rivas, M.D., Mexico City, Mexico)

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#### Methyl Chloride Intoxication

Because a definitive test for methyl chloride intoxication is lacking, the diagnosis must be based on the symptomatology, physical findings, and a history of exposure. The symptoms may resemble those seen in common diseases of viral or bacterial etiology, particularly in less severe degrees of intoxication; this makes the diagnostic problem very difficult, and cases may not be recognized. However, after analyzing their cases and reviewing those reported in the medical literature, the authors believe that the overall clinical picture is sufficiently characteristic to suggest the possibility of methyl chloride poisoning and to allow diagnosis with considerable certainty when supported by the exposure history.

Most of the reported cases of methyl chloride intoxication have resulted from its use as a refrigerant; the hazard in the refrigeration industry, particularly to repairmen and to the unsuspecting occupants of an apartment in which the gas has escaped, has long been recognized. The authors report a number of cases seen in a synthetic rubber manufacturing plant. Here the exposures resulted from the release of methyl chloride gas from an aqueous solution. Two cases were recently observed in mechanical workers who were engaged in repairing a unit; these cases are reported in some detail. The other cases are more briefly reported and were observed among process employees several years ago when the operating conditions of the then new plant were inadequately controlled. All these cases were moderately severe intoxications, with symptoms sufficient to result in time lost from the job, but none of the employees was seriously ill or manifested any permanent effects of the illness.

The symptoms of the affected employees followed a recognizable pattern. Dizziness, weakness, blurred vision, muscular incoordination, and drowsiness occurred in all cases; gastrointestinal complaints, sleep disturbances (in the later stages of illness), mental confusion, paresthesias, and persistent singultus were other prominent symptoms. A staggering

gait, tachycardia, and slight elevation of temperature were common findings. The employees were disabled for from 10 to 30 days, but complete recovery occurred in every case. The usual clinical laboratory studies were not altered by the degree of intoxication observed. (Arch. Industrial Hyg., Oct. 1953, H. Hansen, M. D., N. K. Weaver, M. D., and F. S. Venable, M. S., Medical Department, Esso Standard Oil Company, Baton Rouge, La.)

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### Pulmonary Manifestations of Leptospirosis

This discussion is confined to the pulmonary findings because most other manifestations of leptospirosis have been elaborated elsewhere.

The pulmonary changes in leptospirosis consist chiefly of a hemorrhagic pneumonitis. There may be petechiae or ecchymoses scattered through the lungs, pleura, and tracheobronchial tree. In advanced cases there are localized or generalized areas of extensive intrapulmonary hemorrhage and edema. Confluent patches of hemorrhage may resemble infarcts. Microscopic examination reveals no evidence of a primarily inflammatory process, although there may be areas of leukocytic infiltration and active phagocytosis. Spirochetes have not been recovered from the lungs. Bronchopneumonia is a frequent complication in the seriously ill. The lungs are sometimes normal in appearance.

The roentgen manifestations may consist of (1) small patchy localized infiltrations which have the appearance usually ascribed to "bronchopneumonia" or more linear or segmental infiltrations such as are seen in atypical pneumonia; (2) confluent, larger (even massive) areas of consolidation which have the appearance of pneumonia, pulmonary edema, or parenchymal hemorrhage; or (3) widely disseminated small infiltrations previously described. No sharply delineated lobar or segmental types of consolidation, such as are classically seen in pneumococcal pneumonia, have been reported. There may be a small amount of pleural effusion.

Leptospirosis occurs with sufficient frequency in this country that it should be considered in the differential diagnosis of any acute febrile illness accompanied by one or more of the following features: jaundice, nephritis, aseptic meningitis, or hemorrhagic pneumonitis.

Pulmonary involvement, in the form of a hemorrhagic pneumonitis, is occasionally an early or most striking clinical manifestation of this disease. For this reason, it should be of particular interest to roentgenologists.

The case histories and chest roentgenograms of 33 patients with leptospirosis were reviewed. In 2 cases the roentgen changes consisted of localized or segmental "bronchopneumonia"; in 2, of widely disseminated small pulmonary infiltrations; and in 1, of a massive area of consolidation.

Post-mortem examination in 2 cases demonstrated that the radiographic findings, which were interpreted as "pneumonia," were due to pulmonary hemorrhage and edema. (Radiology, Sept. 1953, C. M. Silverstein, M.D., Grady Memorial Hospital, Atlanta, Ga.)

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#### Pulmonary Manifestations of Disseminated Lupus Erythematosus

The collagen diseases are disorders of the connective tissue of the body, usually involving multiple organs. Pulmonary involvement has been described in each of the principal collagen diseases: rheumatic fever, periarthritis nodosa, disseminated lupus erythematosus, scleroderma, and dermatomyositis. For the most part, however, the pulmonary lesions represent either rare manifestations of common diseases, as in rheumatic fever, or incidental features of rare diseases, such as periarthritis nodosa. The pulmonary manifestations of lupus erythematosus have received little attention; the frequency of pulmonary involvement has not been emphasized in most descriptions of this disease. The recent development of a useful diagnostic test has stimulated interest in disseminated lupus erythematosus and has demonstrated it to be more prevalent and more protean than previously thought. It seemed desirable, therefore, to investigate more fully the nature and frequency of pulmonary changes in this disease.

It appears a reasonable conclusion that pulmonary involvement is extraordinarily frequent in disseminated lupus erythematosus. However, the diffuse perivascular lesions which have been described as characteristic of the collagen disorders are only occasionally observed in disseminated lupus erythematosus; they were noted roentgenologically in but 1 patient of the 22 patients in the present study. Specific pulmonary lesions are uncommon on pathological examination; they were not observed at necropsy in 9 cases at Philadelphia General and Graduate Hospitals. Similarly, large pleural effusions resulting from serositis of lupus erythematosus appear to be relatively uncommon, having been noted in only 2 of the patients in the present study.

By far the most common pulmonary manifestation of disseminated lupus erythematosus is pneumonia, either lobar or patchy in distribution, presumably bacterial in etiology, and in most instances responding in usual fashion to antibiotic therapy. A striking feature, indicative of special susceptibility to pneumonia, is the recurrent and migratory character of the infections, noted in 3 of the author's patients, and alluded to by Hodges and by Klemperer.

The cause for the marked susceptibility of the lupus erythematosus patient to pneumonia is not clear. It may be the result of the general depression of resistance to infection which characterizes this disease, but local factors are probably also involved. Bagenstoss has observed mucinous

interstitial edema of the alveolar walls, which he suggests may be responsible for the interstitial pneumonitis that is observed in this disease, but he cautions that this type of pneumonitis is to be distinguished from ordinary pyogenic and fibrinous types of bronchopneumonia. It may be suspected that some alteration of bronchial or pulmonary structure is likewise responsible for the extraordinary frequency of bacterial pneumonias in disseminated lupus erythematosus.

Until recently, the diagnosis of disseminated lupus erythematosus was rarely considered, unless a butterfly malar rash, polyserositis, renal involvement, endocarditis, leukopenia, and elevated serum globulins were present. The development of a useful diagnostic test, the lupus erythematosus phenomenon, now permits recognition of the disease in many instances in which the classical manifestations are lacking. Application of the lupus erythematosus test, moreover, has resulted in an expanded concept of disseminated lupus erythematosus; it is evidently a more widespread disease than has hitherto been suspected. Patients with a variety of neurological, hematological, and gastrointestinal manifestations have been found to exhibit the lupus erythematosus cell phenomenon. It has been suggested that disseminated lupus erythematosus may first manifest itself by such syndromes as epilepsy and hypersplenism. It appears justifiable to suggest that another mode of onset may be with respiratory symptoms. In many instances, the pulmonary manifestations are overshadowed by those of the systemic illness, but occasionally, as in 2 of the patients described, respiratory symptoms may dominate the clinical picture. This observation is of considerable importance, for it demonstrates that in pulmonary or pleural diseases of obscure etiology the diagnosis of disseminated lupus erythematosus requires consideration. (Am. J. M. Sc., Oct. 1953, H. L. Israel, M. D., Philadelphia General Hospital, Philadelphia, Pa.)

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#### Evaluation of Teridax

A significant advance in the technique of cholecystography was made in 1940 with the introduction of iodoaliphonic acid (Priodax). This has proved to be a very satisfactory medium. However, the occurrence of minor side-effects in a small percentage of patients caused further search to be made for an improved cholecystographic medium.

In 1951, iodopanoic acid (Telepaque) was introduced. This compound has resulted in increased density of the gallbladder shadow, lower frequency of side-effects, and frequent visualization of the extrahepatic ducts. However, Telepaque has several disadvantages.

Shehadi has defined the minimum requirements of an ideal cholecystographic medium as: (1) Absence of systemic toxicity, or, at the most, a very low level of toxicity; (2) early and rapid absorption and absence of

irritation to the mucosal surface of the gastrointestinal tract; (3) selective excretion in the bile, and, consequently, localization in the gallbladder; (4) sufficiently high content of radiopaque material to insure adequate roentgenological visualization; (5) reliable results following oral administration; and (6) rapid and complete elimination.

A new cholecystographic medium, Teridax, which closely approaches this definition has recently been made available. This compound produced gallbladder shadows intermediate in density between those obtained with Priodax and Telepaque when used in over 500 cases by Shapiro.

Excretion of Teridax occurs principally via the kidneys. The rate and magnitude of total excretion of this material has been shown to be of the same order as that of Telepaque. Probably as a result of the renal pathway of excretion. Teridax rarely produces the marked degree of unabsorbed opaque material seen in the colon following administration of Telepaque.

Pharmacologic studies with Teridax have shown a low order of systemic toxicity. Clinical studies have demonstrated a very low incidence of side-effects.

In the series here reported, 75 consecutive patients were subjected to routine cholecystographic examinations in a private office under ideal conditions. Patients were instructed to ingest medication 12 to 13 hours prior to examination, either during or following a fat-free meal. When the patients reported for the examination, each was thoroughly questioned concerning any unusual reactions to the medication.

The cholecystographic density was determined by using an aluminum scale densitometer as described by Poppel, with slight modification.

In this series, the first 30 patients examined were given 3 grams of Teridax, regardless of body weight. No side-effects of any kind were observed in the first 30 patients.

Upon reviewing the cholecystographic densities obtained, it was decided to vary the dosage schedule according to the patient's weight. A dosage of 3 grams was established as a minimum for a patient weighing up to 130 pounds. One additional tablet was given for each 15 pounds over 130, with a maximum of 7 tablets.

An attempt was made to evaluate the contractility of the gallbladder and to determine whether the biliary ducts could be visualized. Following a satisfactory gallbladder visualization, roentgenograms were taken 20 to 30 minutes after ingestion of a fatty meal. In a large percentage of these cases, the biliary ducts were well visualized. Best visualization occurred with the patient resting on his right side prior to taking the film. With this technique, biliary excretion and the biliary tree may be studied without the use of agents producing spasm of the sphincter of Oddi. It is possible that this technique may obviate the need for operative cholangiography.

A low number of side reactions occurred with the larger dosages given the heavier patients. Of this group of 45 patients, 2 complained of diarrhea, and 2 had both diarrhea and dysuria. Increased dosage of Teridax resulted

in better gallbladder visualization. The percentage of unsatisfactory examinations diminished, and fewer repeat studies were necessary. (Am. J. Roentgenol., Oct. 1953, C. R. Weinberg, M. D., City Hospital, Newark, N. J.)

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### Apresoline in Pregnancy

Patients with hypertension of diverse etiology seem to respond to the vasodepressor action of Apresoline, even when hypertension has persisted or recurred after sympathectomy. The induced fall in arterial blood pressure is usually accompanied by an increase in renal plasma flow and a decrease in cerebral vascular resistance. In man, inhibition or abolition of vasopressor reflexes by Apresoline, as well as inconsistent effects on the vasopressor action of epinephrine have been reported.

In the present study, the hemodynamic effects of Apresoline were investigated in normotensive nonpregnant and pregnant women, in patients with toxemia of pregnancy, and in patients with essential hypertension associated with pregnancy. As has been previously reported, ganglionic blocking agents induce only a negligible fall in blood pressure in patients with acute toxemia of pregnancy. In contrast, in normal pregnant women and frequently in pregnant patients with essential hypertension these drugs have a marked hypotensive effect, usually associated with a decrease in both cardiac output and renal plasma flow. It was considered possible that the variation in response to ganglionic blocking agents of these different groups of patients together with the information gathered from determinations of the responses to Apresoline in comparable groups of subjects might clarify the hemodynamic effects of this drug and perhaps the general problem of toxemia of pregnancy.

The clinical material for this study consisted of 75 subjects grouped as follows: 12 healthy normotensive nonpregnant women; 12 normotensive pregnant subjects; 33 patients with toxemia of pregnancy (29 with pre-eclampsia and 4 with convulsive eclampsia); and 18 pregnant patients with essential hypertension. The age of the patients varied from 16 to 39 years and the length of gestation ranged from 22 to 40 weeks.

Marked and prolonged blood pressure fall was observed in the toxemic group in contrast to a slight fall in the normotensive groups. Moderate blood pressure fall occurred in the essential hypertensive group.

Significant increase in cardiac output and reduction in the total peripheral and pulmonary arteriolar resistances occurred at the height of hypotension without any change in the blood volume. The temperature of the upper extremities rose more markedly than that of the lower extremities.

The drug failed to block the vasopressor reaction to cold and to the Valsalva maneuver in pregnant subjects.

The hemodynamic properties of Apresoline indicate that it may serve as a valuable adjunct in the treatment of toxemia of pregnancy. (J. Clin. Investigation, Oct. 1953, N. S. Assali, S. Kaplan, S. Oighenstein, and R. Suyemoto, Cincinnati General Hospital, Cincinnati, Ohio)

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#### Physiologic Studies of Stricture of Common Bile Duct

A report is given of 254 patients operated on by the author at the Mayo Clinic from 1924 through 1951. In this group of patients, 297 operative procedures were carried out for strictures of the common and hepatic bile duct. The patients operated on from 1924 to 1939 and those from 1940 to 1947, were compared with a group of 100 (113 operations) who underwent operation from 1948 to 1951. Follow-up studies have been made in the last group of patients and the results have been reported for those who had been operated on at least a year previously.

The operations used in order of frequency were: hepaticoduodenostomy, choledochoduodenostomy, and choledochocholedocostomy. The best results have been obtained in the cases of choledochoduodenostomy, in which excellent results were reported in from 71% in the series for 1924 to 1947, to 82% of the cases in 1948 to 1951. There has been a progressive increase in the number of duct-to-duct anastomoses after incision of the stricture from 11 to 18 to 27%. Whereas, in the earlier series, only 56% of patients had excellent results from duct-to-duct anastomoses, in the recent series 71% had excellent results. Since 1939 hepaticoduodenostomy has been performed in a greater number of cases because of the greater extent of the strictures. Excellent results have been obtained in 53% of the cases in the 1948 to 1951 group. This percentage of excellent results in contrast to the better results from choledochoduodenostomy is due to the difficulty of anastomosing the short length of hepatic duct available for anastomosis to the intestine and the degree of liver damage due to infection and intrahepatic formation of stone resulting from more nearly complete stricture of the ducts. All patients with strictures of the common bile duct, no matter how many previous operations have been performed, are entitled to re-exploration, unless the degree of liver damage is so extensive and the condition of the patient is so poor that such a procedure is contraindicated. This practically never is the case, unless evidence of hepatic decompensation with ascites is present. The risk of operation in the latter group of cases is extremely high.

In the performance of the operation, regardless of the amount of collateral circulation present, the dissection should be continued until either the ends of the duct or most certainly the upper unobstructed portion of the duct is found, even though it necessitates intrahepatic exploration and drain-

age. In the last series of cases, it was possible to make ductal or ductal intestinal anastomosis in 90% of the cases and to relieve the biliary obstruction by external hepaticostomy in the additional 10%.

The hospital mortality rate in the first series of cases was 10.2%, in the second series, 3.0%, and in the last, 7.1%.

Pain, fever, and jaundice, occurring independently or together, are evidence of cholangitis secondary to obstruction at the anastomosis, and are not due to duodenal biliary reflux of fluids and food.

Best results have been obtained when prosthetic devices are used to splint the anastomosis for periods of at least 9 months. When intrahepatic infection is severe, the most satisfactory splint has been the T tube, especially when there has been formation of stones in the intrahepatic duct. Otherwise an indwelling catheter, extending through the sphincter of Oddi, is used to splint the duct-to-duct anastomosis, and such a catheter, or portion of it, is used to splint duct-to-intestine anastomosis. Bile pigment accumulates in the lumen and around the sides of all prosthetic devices placed within the common bile duct and produces obstruction. Therefore, such tubes must be removed, preferably without re-operation. (Ann. Surg., Oct. 1953, W. Walters, M. D., Mayo Clinic, Rochester, Minn.)

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#### Splenic Puncture

Splenomegaly presents a problem to internist and surgeon alike, and many times more information is needed than is made available by the usual methods of examination. Careful clinical evaluation, examination of the peripheral blood, and study of the bone marrow often do not provide an accurate explanation for the enlargement of the spleen. For this reason, splenic puncture has long been considered a procedure which might be helpful in the differential diagnosis of the splenomegalies. Splenic puncture, however, is not without danger, and the numerous deaths which have followed this procedure in the past have made most workers fearful of employing it. It appeared to the authors that there still is considerable danger in any splenic-puncture technique in which a piece of splenic tissue is removed for histologic examination. On the other hand, the authors believe that there is little, if any, danger in the type of puncture which yields material for cytologic study. The major disadvantages, then, in the procedure which is presented is that its value is in direct proportion to the ability of the examiner to recognize cytologic changes in the material obtained and to interpret these findings correctly.

In the selection of patients for splenic puncture the following essentials must be kept in mind: (1) Only definitely palpable spleens should be punctured. (2) No patients with any hemorrhagic tendency should be subjected to splenic

puncture. (3) Puncture should not be performed in the presence of a septic splenomegaly or in the instance of a painful spleen, whether owing to stretching of the capsule or to infarction. (4) Unconscious patients and children must never undergo puncture.

A series of 46 splenic punctures is reported, and the technique employed is described. The procedure used has proved to be safe and helpful in diagnosis. Splenic puncture permits the making of an accurate diagnosis on occasions when otherwise the diagnosis might only be established by surgical operation or necropsy. Splenic puncture may enable the surgeon to reach a more accurate decision regarding the indications for or the contraindications to splenectomy in cases of splenomegaly. (Arch. Surg., Sept. 1953, D. O. Ferris, M. D. and M. M. Hargraves, M. D., Mayo Clinic, Rochester, Minn.)

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#### Free Cysts of the Peritoneal Space

The authors' interest in this condition was first aroused when one of them was consulted concerning the finding of a gelatinous cyst, about 1 cm. in diameter, free in the abdominal cavity of a 24-year-old women with chronic pelvic inflammatory disease. Although it was apparent that the finding was incidental and perhaps unimportant and not related to the main condition which led to the operation, the surgeon requested microscopic examination. The wall of the formation was found to consist of regularly aligned, flattened, or low cuboidal cells which lay upon a thin layer of fibrous connective tissue. Because doubts persisted of the exact nature of the cyst, the report was filed under the heading of "free cyst of the peritoneal space."

Six months had elapsed when the authors were faced with an identical finding at an operation, and 2 additional examples were observed thereafter at autopsies.

The appearance of the cysts, both on observation with the naked eye and in the microscopic sections were almost identical. They ranged in size from 1.2 to 2 cm. in the largest dimension and in shape from round to oval. The contents of the cysts were jellylike and yellowish gray in color. The cystic walls were thin, transparent, smooth, and glistening, both inside and out. In all instances the cyst walls were lined by a single layer of regular, flattened, spindle-shaped, or low cuboidal cells. In some areas a few cells were missing, and occasionally a larger segment of cyst wall was devoid of cellular layer. In places, the connective tissue fibers of the cyst walls were in compact arrangement, but in other places, they were spread apart apparently because of edema. No cellular elements were present in the lumen of the cysts.

An attempt to ascertain the nature of these cysts found free in the peritoneal space leads to the same difficulties that are encountered in interpreting the nature of other intra-abdominal cysts. In the cases under consideration, the difficulty is increased by the fact that the cysts were not connected with the organ or structure from which they may have originated.

A comparison between the structure of these "free" cysts and the structure of other attached intra-abdominal cysts leads the authors to suggest that the former may originate by detachment from either Wolffian cysts or chylous cysts. (Arch. Path., Oct. 1953, C. G. Tedeschi, M. D., and M. M. Helpern, M. D., Division of Laboratories and Research, Framingham Union Hospital, Framingham, Mass.)

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### Malignant Melanoma

Malignant melanoma is a vicious disease. The incidence is such that the suspicion of this diagnosis must be constantly kept in mind. It is comparatively rare in Negroes.

The melanoma frequently develops in a junction type nevus, and in the early stage may occur in only one portion of this junction type nevus. Danger signs are any activity such as deepening in color, pain, infection, or bleeding. The malignant cells spread by way of direct extension, by way of the superficial and deep lymphatics, and frequently by way of the blood stream.

Diagnosis should be by excisional biopsy only. The tumor itself should not be entered. Aspiration biopsy of an enlarged lymph node is not without risk of the possibility of implanting tumor cells along the needle track, or missing the diagnosis.

Surgery is the only method of treatment. Electro-dessication, coagulation, and all other lesser methods of treatment are dangerous. The question of how radical surgery should be is still an open question. Radical surgery is certainly indicated. Whether ultra-radical surgery, as quarter-ectomy, is indicated is as yet not decided. The later survival statistics will indicate whether these mutilating procedures are necessary, and whether they sufficiently improve the survival rates. Study of the 5-year survival rate in 65 cases influences the authors to continue to employ radical surgery for the present.

The action, diagnosis, and treatment of melanoma in the eye, subungual regions, and recto-sigmoid and anal regions have been discussed. Pregnancy and melanoma, and finally juvenile and prepubertal melanomas are discussed.

One hundred and five cases have been studied and analyzed. Of these, 99 cases of malignant melanoma were seen at the University Hospital of New

York University Post-Graduate Medical School. One of the authors added 6 cases of his own from the Lenox Hill Hospital.

An over-all 5-year survival rate of 41.5% in 65 cases seen between 1944 and 1948 is reported. In the same group in which lymph node dissection was performed, the over-all 5-year survival rate was 52.2%. When the nodes were positive, the 5-year survival was 33.4%. If the nodes were negative, the 5-year survival rate was 66.7%. Similar statistics are shown, with a breakdown into cervical, axillary, and groin dissections.

Lymph node metastases make the prognosis much more serious. Cervical metastases are the most favorable; axillary next, and groin metastases are the most serious. The authors believe that early regional lymph node dissection should be performed, whether or not the lymph nodes are clinically palpable.

An additional technic in the operative procedure of radical groin dissection which has proved to be of practical value in the authors' clinic is described.

Early suspicion, adequate diagnosis by excisional biopsy, and efficient treatment by well-planned and executed radical surgery is vital in the care of malignant melanoma. (Ann. Surg., Oct. 1953, H. W. Meyer, M. D., and S. L. Gumpert, M. D., Department of Surgery, Tumor Service, New York University, Post-Graduate Medical School, New York, N. Y.)

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#### Fractionation of Serum Proteins

The serum protein is a complex made up of a considerable number of components of varying specificity. For example, it includes such substances as mumps antibody, prothrombin, transferrin, and so forth. It would be ideal to be able to express serum protein in terms of its various components, however, at present, this is not possible. Separation of serum protein into main subdivisions is more practical and has been studied by many observers. Within the past decade the widespread use of electrophoretic apparatus has given an impetus to such studies. Parenthetically, it can be stated that these studies have been rather disappointing from the diagnostic point of view. However, such studies have indicated that older methods of fractionation into albumin and globulin alone, leading to the expression of serum protein fractions in terms of albumin/globulin ratios, are much too gross to have clinical significance in most cases.

The use of electrophoresis is not suitable for routine clinical laboratories because of the cost of the apparatus and because few samples can be run in a day. If data approximating those obtainable by electrophoresis could be made available by simple laboratory manipulation, such a method could be useful in the routine laboratory.

Chemical methods of fractionation have been in use and found satisfactory. These methods depend on separation of protein fractions by salting out, and then the protein in each fraction is determined by means of its nitrogen content, biuret reaction, or some other characteristic of protein.

Serum proteins have also been estimated by virtue of the turbidity of their solutions when the protein is precipitated under standard conditions. These methods have shown reasonable agreement with other more elaborate methods.

A combination of salting-out and turbidity determination has been in use in this laboratory for 3 years. It is very simple, and it has proved to be clinically satisfactory. This report outlines the method and presents the results obtained in a variety of clinical conditions with reports from the literature on the same conditions when protein fractionation has been done by electrophoresis.

Serum protein patterns have limited differential diagnostic value. A simple laboratory procedure can provide information which is almost as informative as that obtainable by more elaborate methods.

A similar pattern tends to emerge in a number of various diseases. Serum albumin values are normal or decreased. They do not rise above normal. Serum globulins are normal or increased. They do not drop below normal, as a rule. The albumin/globulin ratio, therefore, is not a valuable measurement.

Alpha globulin fractions tend to increase when serum albumin decreases, particularly when serum muco-proteins increase--when there is tissue destruction and when fever occurs.

The beta globulins tend to rise when there is a marked rise in serum lipids. They also increase in many cases of myeloma.

The gamma globulin values tend to rise in infectious diseases when there is an increase of immune bodies, in liver disease, in myeloma, and in the so-called "collagen" group of diseases. Very high values for gamma globulin fractions are seen in sarcoidosis, collagen diseases, myeloma, lymphogranuloma inguinale, and chronic liver disease.

Moderate decreases in serum albumin are so common that this finding is of no differential value. However, values of less than 1% are seen only in the nephrotic syndrome; 1-2% levels are seen in the nephrotic syndrome, in severe gastrointestinal diseases, liver diseases, and diseases of the reticulo-endothelial system. (Treatment Services Bulletin, Ottawa, Canada, Oct. 1953, P. Green, M.D., and E. Wade, Deer Lodge Hospital, Winnipeg, Manitoba, Canada)

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Topical Use of  
Polymyxin-Bacitracin Ointment in Dermatology

Polymyxin B, which is produced by Bacillus polymyxa, is a stable polypeptide with marked bactericidal action against many gram-negative bacilli and especially against Pseudomonas aeruginosa. Variants of polymyxin were announced independently by three groups of investigators. These variants, designated A, B, C, D, and E, have similar antibacterial spectra but differ in their amino-acid components and toxicity.

The alteration of the bacterial flora by the widespread use of antimicrobial agents has increased the incidence of Proteus, Ps. aeruginosa (B. pyocyanus), and Candida albicans as secondary invaders, owing to the elimination of sensitive bacteria and multiplication of these resistant species. This observation is true for the skin as well as for other locations. Owing to the high bactericidal activity of polymyxin B against gram-negative organisms, conjunctivitis, granulating wounds, and burns infected with Pseudomonas have been successfully treated with this antibiotic in solution, in a cream, and in a petrolatum base.

Because polymyxin B is bactericidal for most gram-negative bacteria and possibly some fungi, its combination with bacitracin, an antibiotic which is active against gram-positive organisms, in an ointment base makes available a broad-spectrum bactericidal preparation for topical application.

The purpose of this investigation was to study such a preparation, namely Polysporin, which contains 10,000 units of polymyxin B and 500 units of bacitracin per gram in a special low-melting petrolatum base, in which the drugs are very stable. That this combination of antibiotics is effective and has a low index of allergenicity and sensitization is indicated by the report on 147 patients treated with it in a water-soluble base by Gastineau and Florestano.

The ointment was used for the treatment of a variety of infected primary and secondary dermatoses in 429 patients. With 65 patients it was used prophylactically to prevent infections after various procedures, such as fulguration, irradiation, and cryotherapy.

Cultures of and sensitivity tests on the offending organism are ideal to determine the most effective drug for the case under consideration, but these are often not practical in office practice.

Inasmuch as several antibiotics are available for topical use that are not in general use for systemic administration, it is probably wisest to favor them if at all possible. It was believed that the combination of an antibiotic effective against gram-positive organisms (bacitracin) with one effective against gram-negative organisms and especially Pseudomonas (polymyxin B) would be satisfactory. It was this type of preparation that was utilized in this study. Polymyxin B is considered the best available drug for Pseudomonas and certain other gram-negative organisms.

Actually, in the concentrations of polymyxin employed, namely 10,000 units per gram, this antibiotic also shows activity against many gram-positive organisms. In one series of sensitivity studies on hemolytic staphylococci, no growth was noted after a concentration of 500 units per gram was reached. This situation undoubtedly occurs with many gram-positive strains.

Bacitracin, without apparent rationale, has been reported as being effective in controlling chondrodermatitis nodularis chronica helicis. However, in the cases observed by the authors for several months, this was not borne out. No effect was noted in the condition as to either the pain or the size of the lesion.

In most cases, blepharitis marginalis appeared to respond extremely well to the preparation under study. For many of the common pyogenic skin lesions due to gram-positive organisms, the results appeared about the same as those with bacitracin ointment. In a large series of cases, infectious eczematoid dermatitis responded well to the ointment.

A few cases of irritation were observed in this series. However, when the antibiotic was the offending agent, tests with the individual components proved the irritation to be due to the bacitracin. No case of sensitivity to polymyxin B was seen in this series. One case of sensitivity to the petrolatum base was observed, but this was considered unusual. Actually, the incidence of irritation to the ointment was low, and the preparation was thought to be very satisfactory from this standpoint.

With the widespread use of many antibiotics--particularly penicillin--there is a possibility of overgrowth of Pseudomonas or Proteus organisms as well as fungi. That this occurs has been established, mostly in the pediatric literature. This problem is almost entirely avoided by the use of polymyxin. Undoubtedly, many such gram-negative skin infections have gone undiagnosed with the use of other antibiotics on varied skin infections. This phenomenon may have accounted for the lack of response to therapy in some skin ulcerations in the past.

The results of this study warrant general use of this preparation therapeutically for primary and secondary infections and prophylactically after procedures such as fulguration, irradiation, and cryotherapy. (Arch. Dermat. & Syph., Sept. 1953, R. L. Kile, M.D., E. Rockwell, M.D., and J. Schwarz, M.D., College of Medicine, University of Cincinnati, Cincinnati, Ohio)

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#### Polluted Air, a Growing Community Problem

Industry, as well as government, is keenly aware of the growing interest of the public in atmospheric pollution and its health and economic implications. Many millions of dollars are being spent by both for research and correction. Industry itself is spending an estimated \$120 million a year to

control air pollution. Even so, few experts believe that in the foreseeable future our cities will have "country fresh" air. Air pollution is a penalty of our modern way of life, and, unless we wish to pay exorbitant prices for certain commodities, we may have to tolerate a certain degree of atmospheric pollution for years to come.

The public in general fails to realize that the atmosphere is the world's greatest sewer. All organic waste, industrial or otherwise, must finally be discharged into the air either directly, through combustion, or by disintegration. Technology, however, in many cases can alter the chemical composition of industrial and domestic organic compounds so as to make them innocuous. In the past, the atmosphere has been used to disperse much of our inorganic waste over large areas. This type of pollution can be prevented with modern dust collection systems and electrical precipitators. Such control measures are costly, however, and they cannot be expected to be put in general use in the absence of either restrictions or economic advantages.

The effects of atmospheric pollution on people may be arbitrarily divided into four major categories: effects on human health and comfort, toxic effects on animals and vegetation, economic damage, and loss of natural resources.

Several conclusions may be drawn:

The atmosphere is a great receiver and diluter of civilization's waste products.

It is suspected that there is a relationship between air pollution and certain chronic illnesses in humans although this has never been definitely proved. There is no doubt, however, that under certain combined topographic and meteorologic conditions, acute illness and death in man may occur.

Certain atmospheric pollutants when present in sufficient concentration have definite toxic effects on animals and vegetation.

Atmospheric pollution causes great economic waste and a loss of valuable mineral resources.

There appears to be a remarkable similarity in the qualitative pattern of the inorganic pollutants in large industrial areas which have climatic and industrial resemblances.

Contaminants are largely organic in nature, but insufficient information is available on the organic constituents to conclude that there is a similarity in the organic contaminants in industrial areas.

The degree of pollution in any area is affected by seasonal and meteorological variations.

Air pollution is not an insolvable problem. However, its solution is going to require patience, persistence, research, and a mutual understanding among the public, government, and industry. Each can and must play a definite part in bringing about cleaner air for towns, cities, and metropolitan areas.

The public must realize that it is a part of a modern technologic society and that its continued high standards of living call for full industrial production. The average man must further realize that he too is a contributor to air pollution because of his automobile, his backyard incinerator, and, often, because his home heating system is inefficient.

The municipal and State governments have an important part to play in the solution of this problem. Legislation seems to be inevitable.

Much research is still needed on the health effect of pollutants, particularly combinations of pollutants. In the meantime, studies should be undertaken by cities and towns to define the extent of the air pollution problem and to determine the major sources of contaminants.

Because of the magnitude and complexity of the air pollution problem, the solution must obviously lie in concerted action. An individual industry can rarely afford to engage in specialized toxicologic studies of suspected harmful contaminants. It must therefore draw upon the resources of universities, research foundations, and other private organizations, and government. Furthermore, it must accept the community as a partner in a jointly recognized and accepted effort to cleanse the atmosphere of excessive and harmful contaminants. (Pub. Health Rep., Sept. 1953, Public Health Service, Health, Education, and Welfare Building, Washington 25, D.C., H. N. Doyle)

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#### Training Courses for USNR Medical Personnel

Training courses of 2 weeks' duration for Naval Reserve male medical personnel available during the third quarter, Fiscal Year 1954 are as follows:

Insect and Rodent Control. A class is scheduled to convene at the U. S. Naval Air Station, Jacksonville, Fla., on the first and third Wednesday of each month. The 1st, 3rd, 4th, 5th, 6th, 8th, and 9th Naval Districts and the Potomac River Naval Command have been assigned a quota for this course.

Malaria and Insect Control. A course is scheduled to be conducted at the U. S. Naval Air Station, Alameda, Calif., for the benefit of male medical personnel residing in the 11th, 12th, and 13th Naval Districts. Convening dates may be obtained from the Commanding Officer, Naval Air Station, Alameda, Calif.

These courses have been designed to provide active duty for training, information, and recommended techniques to be employed in specialized fields closely related to naval medicine which are not readily available to such personnel in their civilian pursuits, but invaluable to their respective function in the event of mobilization. Eligible personnel who desire to attend these courses in a pay status should submit their request to the

Commandant of their home naval district at the earliest practicable date. Attention is invited to the fact that attendance at these courses will not, in any way, increase the Reservist's vulnerability for orders to extended active duty. (ResDiv, BuMed)

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## OPNAV NOTICE 1741

23 Oct 1953

From: Chief of Naval Operations  
To: All Ships and Stations

Subj: The Navy Mutual Aid Association; removal of restrictions of membership in

1. Purpose. This Notice sets forth the conditions under which officers of the Regular Navy, Marine Corps, and Coast Guard may become members of the Navy Mutual Aid Association.
2. Background. The Navy Mutual Aid Association is a nonprofit, officer-controlled association established in 1879, under the auspices of the Secretary of the Navy, for the purpose of providing immediate aid to the dependents of deceased officer personnel in the form of a substantial cash payment wired or cabled anywhere in the world, and in the prompt preparation and submission of all Government claims.
3. Conditions of New Membership. Any Regular commissioned or warrant officer on the active list of the Navy, Marine Corps, or Coast Guard, not over 45-1/2 years of age, is now eligible for membership.
4. Inquiries. Interested officers should address their inquiries to the Navy Mutual Aid Association, Navy Department, Washington 25, D.C.
5. Cancellation. This notice is cancelled when the information contained herein has been disseminated.

ROBT. B. CARNEY

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From the Note Book

1. The Fourth Annual Meeting of the Metropolitan-New York Society of Oral Surgeons was held at the U.S. Naval Hospital, St. Albans, N.Y., on 4 Nov 1953.
2. Military surgeons of many nations and men and women of the federal health services were expected to attend the Sixtieth Annual Convention of the Association of Military Surgeons of the United States, November 9-11, 1953, at the Hotel Statler, Washington, D.C. Many friendly foreign nations have

appointed delegations to attend the Convention and some 50 of their leading military surgeons were named to attend. Among these delegates were: Major General Djura Mesterovic, Surgeon General of the Yugoslav People's Army; General Carl Erik Lennart Groth, Surgeon General of the Swedish Armed Forces; General Miguel Lafont, Surgeon General of the Spanish Air Force; Major General Doctor Fernand Mans, Director General of the Belgian Military Medical Services; Doctor Raul Yazigi, General of the Air Brigade--Surgeon General of the Chilean Air Force; Brigadier K. A. Hunter, Director General of Medical Services (Army) and Air Commodore A. A. G. Corbet, Director of Medical Services (Air Force) of Canada; Surgeon Commander E. James, Royal Navy, and Lieutenant Colonel W. R. W. West-Watson, M. B. E., RAMC, (both members of the British Joint Staff Mission, Washington, D.C.); and an imposing roster of others. Also, many of the outstanding leaders in the field of medicine in the United States agreed to participate in meetings of the Convention. These include: Dr. Chester S. Keefer, Dr. Melvin A. Casberg, Dr. Edward J. McCormick, Dr. Lester M. FitzGerald, Dr. Leonard A. Scheele, Dr. Royce Franzoni, Dr. Howard A. Rusk, the Honorable Val Peterson, Dr. Morris Fishbein, Dr. Herbert Ramsey, Dr. Paul R. Hawley, and a host of others. Rear Admiral W. McK. Craig (MC) USNR is President of the Association.  
(Public Relations Committee, Association of Military Surgeons)

3. The Navy dental training film "Periodontia," entered in competition with other films on parodontology at the Thirteenth Congress of the International Association for the Research on Parodontopathies, held in Geneva, Switzerland, July 14-19, 1953, was awarded a Bronze Medal Award. This is the third Navy dental training film to win an international award. The first, "Endodontia," was awarded a Silver Award in 1949 when it was shown at the International Exhibition of Cinematographic Art, held at Venice, Italy. The second, "Complicated Exodontia," also shown at the Venice Film Festival, won a Silver Award in 1951. (TIO, BuMed)

4. The Public Health Service has named a committee of 7 physicians to advise concerning the practical problem faced in connection with the program of allocating gamma globulin for poliomyelitis. The group has been asked to interpret the allocation program through medical organizational channels so as to prevent misunderstanding, to evaluate the acceptability of the distribution plan, and to suggest desirable changes. (Pub. Health Rep., Oct. 1953)

5. Five hundred and thirty-two consecutive histologically confirmed cases of cancer of the lung are analyzed. The operative mortality in patients in whom the cancer was removed was 22%. The 5-year survival rate was 22%

of the patients with the cancer removed and 9% of the entire series. (Ann. Surg., Oct. 1953, J. H. Gibbon, Jr., F. F. Allbritten, Jr., J. Y. Templeton, III, and T. F. Nealon, Jr., Jefferson Medical College Hospital, Philadelphia, Pa.)

6. A group of patients with paralysis agitans received a therapeutic trial with Compound 08958 (1-phenyl-1-cyclopentyl-3-piperidino-1-propanol hydrochloride). Forty-six percent received beneficial results superior to those obtained by standard medications. Side-effects were similar to those produced by other atropine derivatives. (J. A. M. A., Oct. 24, 1953, K. R. Magee and R. N. DeJong, Ann Arbor, Mich.)
7. The nature, importance, recognition, management, and prevention of penicillin reactions are discussed in the American Journal of the Medical Sciences, Oct. 1953 by R. A. Kern and Maj. N. A. Wimberly, Jr., MC, USA.
8. Methods are presented to identify and distinguish colorless solutions which are commonly used in the hospital and operating rooms. (Plast. & Reconstruct. Surg., Sept. 1953, K. Pickrell, F. Masters, N. Georgiade, and C. Horton)
9. The toxicity and mechanism of action of 4 new thionophosphates with insecticidal activity in order to obtain data on which to base an assessment of their potential hazards to man are discussed in Archives of Industrial Hygiene and Occupational Medicine, Oct. 1953, K. P. DuBois, J. Doull, J. DeRoin, and O. K. Cummings, University of Chicago, Chicago, Ill.
10. A treatise on initial treatment of acute injuries of the eye appears in the Nov-Dec Bulletin of the American College of Surgeons. The treatise has been written especially for the Committee on Trauma's Manual devoted to injuries and was designed to complement "An Outline of the Treatment of Fractures."
11. The diagnosis of acute poliomyelitis is described in Postgraduate Medicine, Oct. 1953, by C. G. Grulée, Jr.
12. In 2 patients with teratoid tumors of the mediastinum, the primary tumor was localized in the region of the thymus. The testes were excluded as the primary site by the use of multiple block serial sections. (Arch. Path., Oct. 1953, W. S. Pugsley and R. L. Carleton, Los Angeles, Calif.)

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Recent Reports Received From U.S. Navy Research FacilitiesMedical Research Laboratory, Submarine Base, New London, Conn.

1. Selected Socio-Cultural Factors Affecting Interpersonal Relations as Revealed by the Blacky Pictures: I. Discrimination Between "Unsuitable" and "Normal" Recruits. NM 003 041.52.01, 23 June 1953.
2. General Description of the Laboratory, It's Program, and Facilities. 15 Oct 1953.
3. Relative Evaluation of Earphones by Search Tube Microphone Techniques as Applied to the Permoflux PDR-8 and the Telex Twinset Units. NM 003 041.21.09, 6 May 1953.
4. Adaptation of the Ear to Sound Stimuli: The Intensity-Time Relationship. NM 003 041.34.06, 20 May 1953.
5. Etiological Factors in the Disqualification of Submarine Personnel. NM 003 041.13.03, 22 June 1953.
6. Correction Factor to the Photometric Square Law for Area of Source and Receiver. NM 003 041.40.03, 27 July 1953.

Naval Medical Research Unit No. 3, Cairo, Egypt

1. Summary of the Known Distribution and Biology of Ornithodoros erraticus (Lucas, 1849) (Ixodoidea, Argasidae) in Egypt. NM 005 050.29.17, 1953.
2. Mammals From Egypt, the Sudan and Eritrea. III. Four New Mammals From the Anglo-Egyptian Sudan. NM 005 050.39.10, 1953.
3. Mammals From Egypt, the Sudan and Eritrea. IV. On the Occurrence of Hedgehogs of the Genus Paraechinus in the El Tahreer Province of Egypt. NM 005 050.39.10, 1953.
4. Three New Species of New Guinea Culex, Subgenus Lophoceraomyia, With Notes on Other Species. NM 004 040.39.29, 1953.
5. Isolation of Human Enteric Pathogens From Foods in Cairo, Egypt. NM 005 083.06.04, 1953.
6. Severe Clubbing of the Fingers in a Case of Silent Interatrial Septal Defect. NM 007 082.09.05, 1953.
7. Observations on the Epidemiology of West Nile Virus Infection. NM 007 082.13.08, 1953.

Naval Medical Research Institute, NNMC, Bethesda, Md.

1. Plasma Potassium Curves in the Rabbit, Following Single and Repeated Injections of Potassium Chloride. NM 007 081.02.11, 18 May 1953.
2. Meteorological Data Eniwetok Atoll. Memo Report 53-8, NM 006 012. 01, 18 May 1953.
3. Summaries of Research, 1 Jan-30 June 1953.

4. Use of Intraoral Photographs as a Means of Personnel Identification and Registration of Oral Lesions and Deformities. NM 008 012.03.04, 27 May 1953.
5. The Mechanism of Local Cold Injury. NM 000 018.01.07, 2 June 1953.
6. Studies on the Mechanism of Immunity of Chickens to Newcastle Disease Virus: I. Investigation of the Possible Role of Cellular Factors, NM 005 048.11.04, 27 Feb 1953; II. Experiments Concerning the Mode of Action of Antibodies, NM 005 048.11.05, 27 Feb 1953.
7. Studies on the Variability of Cuticular Patterns in Pure Lines of Meloidogyne Spp. the Root-Knot Nematode. NM 005 048.21.01, 11 Aug 1953.
8. Statistical Mechanical Theory of Protein Solutions. Memo Report 53-14, NM 000 018.06, 11 Aug 1953.
9. The Fat-Globule Membrane of Nonhomogenized and Homogenized Milk. III. Differences in the Sedimentation Diagrams of the Fat-Membrane Proteins. Memo Report 53-11, NM 000 018.07, 27 July 1953.
10. Modification of Lattice Theories of the Liquid State. Memo Report 53-12, NM 000 018.06, 27 July 1953.

Naval Medical Field Research Laboratory, Camp Lejeune, N.C.

1. High Altitude-High Velocity Flying With Special Reference to the Human Factors. IV Opening Shock of Parachute Descents. NM 006 014.09.01, Jan 1953.
2. Evaluation of an Experimental Surgical Operating Trailer. NM 007 083.04, 9 Sept 1953.

U. S. Naval School of Aviation Medicine, NAS, Pensacola, Fla.

1. Theory of Protection of Man in the Region of the Primary Cosmic Radiation. NM 001 059.13.06, 5 Aug 1953.
2. Ten-Year Follow-Up Study of the Physical Status of 1000 Aviators: Analysis of the Electrocardiograms. NM 001 057.05.03, 26 June 1953.
3. Absolute Beta Measurement of Tritium by Radioautography Using Monolayers as Reference Sources. NM 001 059.16.09, 15 July 1953.
4. Aviators' Vertigo: A Cause of Pilot Error in Naval Aviation Students. NM 001 059.01.37, 12 Aug 1953.

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The printing of this publication has been approved by the Director of the Bureau of the Budget, June 23, 1952.

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BUMED NOTICE 6020

6 Oct 1953

From: Chief, Bureau of Medicine and Surgery  
To: Ships and Stations Providing In-patient Treatment  
Subj: Diet Sheet, form NavMed-18; revision of

This notice promulgates a revision of Diet Sheet, form NavMed-18.

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BUMED INSTRUCTION 1770.4

8 Oct 1953

From: Chief, Bureau of Medicine and Surgery  
To: Activities in Continental United States Having Annual Navy Contracts for Care of the Dead; All Commandants of Naval Districts and River Commands, Continental United States; and Commandant, Tenth Naval District  
Subj: NavMed-1347, Request for Reimbursement or Payment of Burial Expenses; use of  
Ref: (a) NavMed-61 (Rev. 11-51), Information for Next of Kin

This instruction establishes a procedure whereby next of kin may submit subject form, in lieu of itemized bills, to request reimbursement or payment of burial expenses incurred for deceased Navy personnel.

\* \* \* \* \*

BUMED INSTRUCTION 6310.3

13 Oct 1953

From: Chief, Bureau of Medicine and Surgery  
To: All Ships and Stations Having Medical Personnel Regularly Assigned  
Subj: Instructions and Definitions Relating to Certain Diagnostic Titles, Individual Statistical Report of Patient, and Morbidity Report  
Encl: (1) Subject instructions and definitions

This directive revises and publishes (1) instructions supplementing and clarifying certain instructions contained in the Joint Armed Forces Statistical Classification and Basic Diagnostic Nomenclature of Diseases and Injuries, (2) instructions governing the Individual Statistical Report of

Patient (NavMed-F), and (3) instructions governing the Morbidity Report (DD-442). NavMed-P-1313 and BuMed Inst. 6310.1A and 6310.2 on 1 Jan 1954 are cancelled. Section IV, Chapter 23, ManMedDept is superseded. Enclosure (1) becomes effective 1 Jan 1954.

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#### BUMED INSTRUCTION 5400.2A

21 Oct 1953

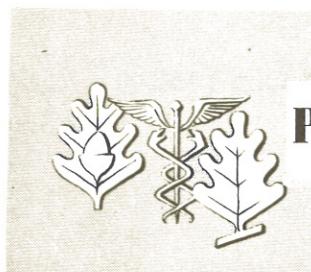
From: Chief, Bureau of Medicine and Surgery  
To: Commanding Officers, U.S. Naval Hospitals

Subj: Hospital organization charts, functional statements, and position listings

Ref: (a) NavMed P-1335, Organization Guide for Naval Hospitals  
(b) NCPI 156

This instruction sets forth the reporting requirements for (a) Annual submission to the Bureau of hospital structural organization charts and functional statements and (b) Periodic submission to the appropriate area wage and classification office of hospital structural organization charts, functional statements, and IVb position listings. BuMed Inst. 5400.2 is cancelled.

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## PREVENTIVE MEDICINE SECTION

### Communicable Disease Control

#### Tattooing

At the request of the District Medical Officer, Fourteenth Naval District, Preventive Medicine Unit No. 6 investigated tattooing establishments in a downtown area, with the following findings:

In one shop an examination of the "sterile," "clean," ready-assembled needles revealed dye debris deposited between the points of the needles, which were similar to the tines of a fork. Swab tests were made on 5 of these needles, using 4 cc. of tryptone glucose broth, and cultures were made from the dyes, vaseline, and disinfectant solutions. Staphylococcus aureus--beta-hemolytic and coagulase-positive--were recovered from one needle; Staph. aureus--nonhemolytic and coagulase-negative--from another. The blue dye contained Alcaligenes faecalis; the orange dye, Gaffkya tetragena; the brown, diphtheroids and Bacillus subtilis; and the green, G. tetragena and B. sphaericus.

Another shop employed an "artist" who was working without a license and was formerly employed by another shop that was placed out of bounds because of repeated cases of infection. The needles were dirty, and many had broken tips. This investigation resulted in the closing of the shop.

The needles in another shop were dirty, dull, and faulty. The shaft into which the needles must be inserted in order to be rigid was so dirty that, even though a needle might be clean, it would be soiled during insertion through the shaft.

One of the four shops inspected was cleaner than the rest. The operator used each needle on only one man. The needle was then discarded and new needles soldered onto the shafts.

The investigating personnel concluded that the sanitary practices of these shops are not adequately regulated or controlled. The tattoo "artist" has little or no conception of sanitation, and the proprietors pay little or no attention to the qualifications of the operators or to the management of the shop. The bacteriological findings indicate that cellulitis, bacteremia, and transmission of hepatitis virus are not only possible but highly probable.

Vol. 21, No. 5 of the Medical News Letter cited several reports on tattooing as a possible means of transmitting homologous serum jaundice and hepatitis. It also reported a statistically significant difference between the percentage of service personnel admitted to a military hospital over a 6-month period for viral hepatitis who had been tattooed 51 to 150 days earlier and the percentage of tattooed individuals in a group of control cases:

## Tuberculosis Control

### Tuberculin Testing of Medical Department Personnel

During fiscal year 1953, tuberculin tests were made on 3,615 previously untested individuals serving on staffs of naval hospitals. The "Single Test" Purified Protein Derivative Tuberculin was used in most instances, and contained 0.0001 milligrams of P.P.D. Of the 3,615 individuals tested, 2,647 or 73.2% were found to be negative (Table 1). This high rate of negative re-

actors emphasizes the large reservoir of susceptible persons who are apt to have intimate contact with infectious cases.

Table 1. --Tuberculin reactions of previously untested individuals tested with 0.0001 mg. P.P.D.

	Number tested	Negative	Doubtful	1 plus	2 plus	3 plus	4 plus
MC	362	175	5	48	86	32	16
DC	37	21	0	3	5	6	2
NC	626	379	22	87	69	43	26
MSC	38	19	0	4	6	5	4
Hosp. Corps:							
Med.	2427	1975	37	162	129	99	35
Dent.	72	44	2	12	9	3	1
Other	53	34	0	6	10	3	0
Total	3615	2647	66	322	314	191	84

Table 2. --Tuberculin reactions of formerly negative reactors retested with 0.0001 mg. P.P.D.

	Number tested	Negative	Doubtful	1 plus	2 plus	3 plus	4 plus
MC	250	209	5	8	15	7	6
DC	25	19	0	2	2	2	0
NC	491	427	7	19	19	9	7
MSC	44	37	0	1	1	1	2
Hosp. Corps:							
Med.	3636	3287	48	99	90	59	36
Dent.	114	106	1	3	1	0	1
Other	31	29	0	2	0	0	0
Total	4591	4114	61	134	128	78	52

During the same period, 4,591 of those Medical Department personnel who had given negative reactions within the year were retested with the "Single Test" dose. In this group, it was found that 392, or 8.3%, had converted to a positive tuberculin reaction (table 2). If it is considered that the so-called "doubtful reactions" may be a latent manifestation of tuberculin sensitivity, then another 61 must be added to this group of converted individuals.

The resulting total of 9.6% represents those of the 4,591 Medical Department personnel who had converted from a negative reaction to a positive or doubtful tuberculin reaction during fiscal year 1953. This percentage is considerably lower than that found in many studies of hospital personnel throughout the nation. In the latter studies conversion rates were noted to be as high as 39.2%.

Even though the conversion rate for Medical Department personnel seems to be comparatively low, it is advisable to continue the search for unknown cases of tuberculosis. Vigilance can be facilitated by routine chest examination of every hospital admission by the photofluorographic method and also by the continued periodic retesting of those negative reactors who by virtue of their duties are caring for potentially tuberculous patients.

## Insect and Rodent Control

### DDT Resistance in Bedbugs

Several instances of partial resistance of a strain of bedbugs to DDT residual were reported as occurring in barracks of the Naval Receiving Station, Pearl Harbor, during the summer of 1947 by Johnson and Hill in Vol. 12, No. 1, of the Medical News Letter. According to this report, DDT residuals had been effective for 6 or more months since it was first used in 1944. In 1947, however, persistent or recurrent infestations indicated unsatisfactory control in some cases. Controlled tests on paper impregnated with 5% DDT showed that the bedbugs were alive and unaffected after 24 hours' exposure, although they died upon prolonged exposure of 6 days or more. The bedbugs were by no means completely resistant, but were resistant to such a degree that normal DDT residuals could no longer be counted on for effective and dependable control in the case of these strains. They were susceptible to the oily solvents, however, and to heavier rates of application. No infestations were noted that could not be controlled if treated extensively while still minor.

A similar condition was reported in 1953 from an aircraft carrier. The resistant strain was probably picked up at a North African port. Standard residual treatments did not eliminate the infestation, and live specimens were obtained and forwarded to the Bureau of Medicine and Surgery. Tests conducted by the Orlando Laboratories of the U.S. Department of Agriculture demonstrated that these bedbugs were highly resistant to DDT and methoxychlor. Before the report of these tests was received more intensive treatments with DDT had been carried out on the carrier, and the infestation apparently was controlled. This experience closely parallels that reported in 1947 from Pearl Harbor.

An article in *Soap* (Aug. 1953, p. 171) reports an occasional difficulty in controlling resistant bedbugs in the United States over the past 3 years. Tests by the USDA revealed that these strains were also resistant to DDT and methoxychlor, but were susceptible to lindane, dieldrin, and chlordane. The latter 3 insecticides are not approved for this purpose in living quarters. However, for controlling highly resistant infestations, an 0.5% lindane oil or water formulation may be used in spot application to hiding places in walls, bedsteads, and springs. Thorough airing is required. Over-all treatments or space sprays with lindane must not be applied in concentrations greater than 0.1%.

It would appear from these reports that resistant as well as nonresistant strains of bedbugs may be controlled by DDT solutions or standard space sprays with very thorough, repeated treatment, even though little residual effect is obtained.

\* \* \* \* \*

#### References of Interest

The following articles may be of interest to preventive medicine personnel concerned with insect and rodent control:

Dow, R. P. : Notes on Iranian Mosquitoes. *Am. J. Trop. Med.* 2: 683, July 1953.

Trapido, H. and Aitken, T. H. G. : Study of a Residual Population of Anopheles L. labranchiae Falleroni in the Geremeas Valley, Sardinia. *Am. J. Trop. Med.* 2: 658, July 1953.

Sapero, J. J. and Lawless, D. K. : The "MIF" Stain-Preservation Technique for the Identification of Intestinal Protozoa. *Am. J. Trop. Med.* 2: 613, July 1953.

Wolman, A. ; Henderson, J. M. ; Wright, J. W. ; Hall, L. B. ; and Simmons, S. W. : Sanitary Engineering in the Tropics. *Am. J. Trop. Med.* 2: 557, July 1953.

American Public Health Association, Inc. : Year Book 1952-1953. Engineering Section, American Journal of Public Health and the Nation's Health, Committee on Vector Control. Part II, Vol. 43, No. 5, 1953, p. 110.

Goldwasser, R. A. and Davies, A. M. : Transmission of a West-Nile-like Virus by Aedes aegypti. *Trans. Roy. Soc. Trop. Med. & Hyg.* 47: 336, 1953.

Alves, W. and Blair, D. M. : An Experiment in the Control of Malaria and Bilharziasis. *Trans. Roy. Soc. Trop. Med. & Hyg.* 47: 299, 1953.

The Resistance of Construction Materials to Penetration by Rats. Public Health Monograph, No. II, U. S. Public Health Service, Publication No. 277, U. S. Government Printing Office, 1953.

Chapter on Insecticides and Dispersal Methods in Print

"Insecticides and Dispersal Methods," which is the first chapter to be completed for the new Manual of Naval Preventive Medicine, is now being distributed to the field.

## General Sanitation

BuShips Acts to Safeguard Fresh Water Lines

The Bureau of Medicine and Surgery recently reported that there are still in service some laundry washing machines which have submerged inlets that jeopardize the fresh water supply. A submerged inlet makes it possible, in case of failure of fresh-water-supply pressure, to siphon foul water from the washing machine back into the fresh-water line. The foul water may be fresh or salt water if the machine is equipped with both fresh-water and salt-water filling connections.

As a result of this report, the Bureau of Ships has ordered an inspection of all laundry washing machines. Specifications for laundry washing machines during the past 7 or 8 years have required that all fresh-water filling connections be located above the spill level--above the bottom of the door--in the shell of the machine. The Bureau of Ships has recommended that all machines which do not meet these specifications be modified as outlined in BuShips Manual, Chapter 35, Section 35-2. (BuShips Notice 9350 Ser 522-3026, Sept. 3, 1953)

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Water Distillation

The Bureau of Yards and Docks, which is responsible for supplying fresh water at Navy bases throughout the world, including advance bases, and for use in early phases of amphibious operations, usually must depend upon sea water as its principal source. Because sea water is unfit or not potable for immediate use due to its high mineral content, it is necessary to make use of distillation processes as the prime means of desalinating sea water.

Since 1944, the distillation research and development program of the Bureau has been directed toward the establishment of an efficient line of units incorporating the most advanced knowledge. Because the vapor-compressor evaporation unit is a notable advance in the distillation technique, the research efforts of the Bureau have confined themselves largely to production of better units of this type with more efficient distillate to fuel economy ratios.

The vapor-compression evaporator operates on the heat pump principle. Vapor produced at atmospheric pressure from the saline feed water is withdrawn from an evaporator shell, compressed, and then returned to the condensing chamber in the evaporator shell. There its latent heat is given up so as to evaporate more of the saline water. A three-way heat exchanger transfers additional heat from the distillate and from the evaporator blowdown to the incoming feed water, thereby raising its initial temperature. A heating element to raise the water in the evaporator to starting temperature completes the system. The fuel or energy economy of this system is materially greater than that of the multiple effect evaporators. Moreover, in compactness and cost it compares favorably with a single effect evaporator.

Among Bureau developments are the 85- and 200-gallon-per-hour vapor compression distillation units which have passed 720-hour economy runs, producing better than 150 pounds of distillate per pound of fuel oil consumed. The Bureau is encouraging the development of multiple sources of supply for the 85- and 200-gallon-per-hour sizes. (BuDocks Technical Digest No. 35, June 1953, pp. 10-11)

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#### EST Training Proves Its Value

An outbreak of gastroenteric disease occurred recently on board the U. S. N. S. General Alexander M. Patch en route to Bremerhaven and Southampton from New York. Immediately following the initial reports of the outbreak, a Chief Hospital Corpsman, EST (Environmental Sanitation Technician), was transported by air from Headquarters to meet the ship at Bremerhaven. His orders were to investigate the outbreak, to observe food-handling technique, and to instruct steward department personnel in sanitary food-handling procedure.

A well-documented comprehensive report of the investigation of the 6-day epidemic has been submitted. The report shows that the medical officer with advice and assistance from the EST took every precaution to bring the epidemic swiftly under control. Of the 184 stricken, 5 were admitted to the binnacle list and 7 to the sick list. All 7 sick-list patients were food-service workers, several of whom were continued on the sick list for more than 1 day to prevent the possibility of their spreading disease. All stricken food-service workers were transferred to other duties.

All possibilities of the source of infection were investigated and evaluated by the EST. Water analyses, a detailed diary of foods eaten by patients and controls, a resume of the various galley facilities, and examinations of stool specimens of several patients were some of the investigative measures undertaken. Also, stool, food, and water cultures were done by the Board of Health at Southampton, England, and by the Laboratory Section of the U. S. Army Hospital, Bremerhaven, Germany. In addition, rectal

cultures were obtained on all food-service workers approximately 1 week after the epidemic had subsided and were submitted to the Navy Dispensary, MSTSA, Brooklyn, N. Y. Moreover, food samples were submitted to MSTSALANTAREA for further bacteriological study.

Pending the outcome of laboratory findings, no positive conclusions as to an etiological agent can be drawn. Consequently, no recommendations for prevention or control of similar future outbreaks could be made in the report. However, it is apparent that intensive inspection of food areas and personnel, physical examination of all food-service workers, immediate transfer of affected food-service workers to other duties, and other precautionary steps taken by the medical and steward departments, upon the advice of a well-trained enlisted specialist, not only helped to bring the epidemic under control but also served materially to stimulate interest in attaining higher standards of sanitation and cleanliness.

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#### PMU Activities in Food Inspection

Continuing the Navy's policy of making every effort to see that Navy personnel receive the best of food, one Preventive Medicine Unit reports the following findings from its inspections:

Two dairies supplying cottage cheese to activities of the naval district were prohibited from selling that product because of high coliform counts as well as high counts of yeast and mold. In both cases ample opportunity had been given the dairy to remove the causes of the trouble, but no progress was made. Poor refrigeration in the plant and during transit and the use of warm water to rinse the curd were some of the possible causes that were called to the attention of the dairies. It is interesting to note that the dairies were surprised to learn of bacteriological standards for this product. They were apparently unaware of its disease-spreading potentialities. If this concept is widespread, cottage cheese should receive special attention by all persons concerned with milk and milk-product sanitation.

Similarly, it is believed that the attention of all sanitation officers should be invited to dangers inherent in the use of ready-prepared sandwiches sold by Navy exchanges, clubs, cafeterias, and snack bars. It is reported that in the majority of cases the managers of these establishments are buying sandwiches on a price basis only and that little or no attention is given to the sanitary background of the manufacturing shop, to whether or not the plant is being inspected by a recognized health agency, or to the kind of refrigeration the sandwiches receive in the plant. These points are of paramount importance inasmuch as the consumer demand is for egg-, chicken-, turkey-, and tunafish-salad sandwiches. Refrigeration at the point of retail purchase is of little value if the sandwiches are permitted to remain unrefrigerated for several hours at the manufacturing plant or in transit.

Food-Sanitation Course Pass-Out Sheets Available

Pass-out sheets for use in the food-sanitation-training program are now available upon requisition (NavExos 158) at all District Publications and Printing Offices. The sheets, 16 in all, combine drawings and outlines, vividly depicting the principles of food sanitation, and are designed to help the student to acquire as rapidly as possible a thorough grasp of these principles. The pass-out sheets have been selected from those in Instructor's Guide--Sanitary Food Service (NavMed P-1333)

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Use of Metal Sponge

A revision of the BuSandA Manual, Paragraph No. 41064-3.9, recommends the use of metal sponge for the cleaning of food-handling equipment. After initial use, the metal sponge is to be kept in disinfectant (germicide and fungicide). Formerly, pot-cleaning chain was the material recommended. The use of steel wool for this purpose is prohibited.

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Permit No. 1048

OFFICIAL BUSINESS

WASHINGTON 25, D. C.

DEPARTMENT OF THE NAVY  
BUREAU OF MEDICINE AND SURGERY

PENALTY FOR PRIVATE USE TO AVOID  
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